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## Anthropometric outcomes after one year of remote counselling of overweight and obese adults by dietitians

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### Abstract

#### Introduction

The high prevalence of overweight and obese adults in Switzerland (men: 55.5%; women: 31%) and the development of associated comorbidities requires innovative primary health care interventions. Smartphone applications offer interesting possibilities. However, most are not designed for use in nutritional counselling. Oviva developed an application for dietitians to support overweight or obese clients, online. The aim of the following research was to compare short- and long-term anthropometric effects of a one-year, online, lifestyle intervention by dietitians with overweight or obesity adults.

#### Methods

The pilot study, conducted in the German-speaking region of Switzerland, started in April 2016 and was completed in May 2018. Initially, 43 overweight and obese individuals were included, 36 completed the study. During this intervention, participants received individualized, remote counselling from dietitians through the application Oviva. Interactions focused on increasing motivation, providing feedback regarding photo-based food logs and education that was aligned with the individual's lifestyle goals. In addition to the primary outcome of weight change, the following anthropometric outcomes were examined: body mass index (BMI), waist circumference and body fat. The study measured changes from baseline at three and twelve months (M0/M3/M12).

#### Results

Over the course of the study, the median weight loss was 4.9 kg (-21.9–7.5 kg) and 58% of participants achieved a weight loss of  $\geq 5\%$ . Additional anthropometric measurements showed the following results (median (min–max)) at timepoints M0/M3/M12: body weight (kg) M0: 83.5 (67.7–105)/M3: 80.3 (64.5–105)/M12: 78.7 (62.8–107.5); BMI ( $\text{kg/m}^2$ ): M0:30.2 (26.4–33)/M3: 28.4 (24.3–33.5)/M12: 28.0 (24.1–33.5); waist circumference (cm) M0: 92 (74–112)/M3: 85.9 (73.3–108)/M12: 86.5 (78.5–110.5); and body fat (%) M0: 40.5 (27.8–48.5)/M3: 39.0 (22.2–45.0)/M12: 37.9 (21.3–46.9). A significant improvement was observed in all measurements from M0–M3 and M0–M12. A non-significant trend was observed between M3 and M12 in the measurements, except for waist circumference.

#### Discussion

These promising results suggest new approaches to support overweight and obese adults in changing their lifestyle through assistance by dietitians in Switzerland. Nevertheless, long-term, randomized control trials are needed to examine its efficacy and cost-effectiveness. Additionally, this type of remote counselling offers greater flexibility for clients who are unable and/or unwilling to engage in face-to-face counselling and thus, also has the potential to increase patient adherence, in order to attain sustained weight loss.

#### Conflict of Interest

The study was cofunded by Innosuisse-Suisse Innovation Agency (Project-number. 17236.2 PFLS-LS) and Oviva. S. Maurer-Wiesner was paid for her functions as study physician by Oviva. For the study, registered dietitians were hired who performed remote counseling. They have also worked for Oviva. However, they received no additional payment by Oviva for the study.